TRANSMITTAL SLIP	DATE 13 May 86
TO:	OIT-0330-86
ROOM NO.	BUILDING

REMARKS:

INFO

EXDIR RETURNED ORIGINAL
FOLDER TO D/OIT for REWRITE.

STAT

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File

L-260-1R

FROM:		
ROOM NO.	BUILDING	EXTENSION

FORM NO. 1 FEB 56 241 REPLACES FORM 36-8 WHICH MAY BE USED. (47)

Central Intelligence Agency
Washington, D.C. 20505

13 May 1986

Executive Director

NOTE FOR: D/OIT

Ed:

Showed this package to [redacted] who STAT
was concerned that the "work scenario" section overly stresses the analysts' editing and production requirements but underplays their more important analytical functions. I've suggested some wording changes to solve that problem, but I think you should take the opportunity of this letter to talk with Tom and get a better fix on the DI analysts' requirements as he sees them.

Please also change the first sentence of the letter as follows:

"Last December, you and your colleagues kindly met with a group of senior Agency executives, including myself, to discuss IBM's plans for the 3270 PC family. On 10-12 February, a group of our technical officers had the opportunity to meet and engage in a spirited and fruitful technical exchange with Entry Systems Division personnel in Bocca Raton."

[redacted] STAT

SUGGESTED REWRITE OF "WORK SCENARIO":

Intelligence analysis spans virtually all disciplines from largely qualitative political assessments to the mostly quantitative analysis of scientific and technical subjects. Analysts' data processing needs likewise range from word processing and complex document creation to large-scale physical simulation and modeling. The common denominator of analysis is the product which can take many forms -- lengthy reports, short memoranda or briefings. The most common format today for the intelligence product is paper, but the Agency is exploring the possibility of presenting analysis in automated form as well.

The analytical process itself involves synthesizing large amounts of information from numerous sources in a variety of formats -- text, numbers and equations, maps, graphics and photographs. During the process, analysts construct, combine and communicate text, graphics, pictures and spreadsheet data (either in tabular form or as graphics) in compound documents. Thus the "desktop" user interface has strong appeal -- analysts have reacted favorably both to commercial products that use such a metaphor as well as internal Agency prototypes. The key ingredients in the "desktop" interface include:

1) A high-resolution display large enough for two full pages of text side-by-side. Our experience is that 1000 dots horizontally is the minimum resolution required. A screen size of 15-inch is the minimum size required to display two pages of text in a font large enough to read easily; a 19-inch screen is preferable.

2) The ability to display parts of several different documents on the screen at once with separate scrolling for each document.

3) The ability to cut and te between the different documents displayed.

Intelligence analysis requires quite sophisticated graphics. Analytical products often include maps overlayed with symbols, photographs, diagrams, charts or other forms of graphics. The same workstation the analyst uses to produce text should also be able to store, transmit and manipulate all forms of graphics and pictorial information as well. Some production tools are also used in the analytical process. Graphics, for example, help analysts understand many problems through illustration, and spreadsheet software is useful for economists or any analysis which requires mathematical, sorting or counting operations on tabular data. Obviously analysts also need the ability to directly generate graphics from spreadsheets and incorporate both the table and graph into textual documents.

Although intelligence analysts require sophisticated office automation tools for production, their need for advanced analytical tools is even more important. Analysts would like to be able to make use of the techniques being developed by the Artifical Intelligence community as these become available -- expert systems, natural language understanding, and pattern recognition, for example. Any analyst workstation should be able to run such software using the same user-friendly, desktop interface that accesses the production tools.

Because many of the analytical tools needed will never be available "off-the-shelf," any advanced analyst workstation should be amenable to personalization and end-user programming so that those analysts capable of doing so can develop their own analytical programs. Finally, the workstation software should have an open architecture with powerful applications development and programmer productivity tools that will allow analysts to develop their own applications as the need arises. Intelligence analysis is a creative process. A hardened and inflexible group of tools will encourage analysts to do only what the tools permit, while a flexible and creative atmosphere will encourage analysts to probe for new insights and deeper understanding.

DDA/REG LOGGED

ROUTING AND RECORD SHEET

(Optional) Letter

EXTENSION | NO. OIT #0330-86

Director of Information Technology
Hqs.

DATE 25 April 1986

er designation, room number, and	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
DDA	25 APR 1986			1. FYI.
ER	28 APR 1986			
EXDIR	13 MAY 1986			5. For signature.
D/OIT				

DCI EXEC REG

510 USE PREVIOUS EDITIONS

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TRANSMITTAL SLIP		DATE
TO: ER		
ROOM NO.	BUILDING	
REMARKS:		
FROM:		
ROOM NO.	BUILDING	EXTENSION

FORM NO. 241 REPLACES FORM 36-8 WHICH MAY BE USED (47)
1 FEB 56

Central Intelligence Agency

Washington, D.C. 20505

OIT 0330-86

STAT

IBM Corporation
Building 236
P. O. Box 1328
Boca Raton, Florida 33432

Dear STAT

On 10-12 February, Agency technical officers had the opportunity to meet and engage in a spirited and fruitful technical exchange with Entry Systems Division personnel in Boca Raton. They received, under non-disclosure agreements, excellent presentations on IBM's future directions in the intelligent workstation arena. Your personnel discussed their plans for the evolution of the Personal Computer. Overall, these briefings indicated a convergence of the AT and 3270 AT directions into a single intelligent workstation product family. This is a direction we fully support.

On the basis of what we have learned, however, there is one area of keen interest to this Agency that IBM does not plan to address. This area is "high-end" office automation. We define this as a system designed to enhance the productivity of a professional whose work products are complex documents. I have enclosed a summary of a typical work scenario for an intelligence analyst. To automate such work in our environment requires an intelligent workstation that can attach to our host systems--large, primarily VM systems, using 3270 protocols. This workstation must be able to create, display, print, and communicate compound documents combining text, high-quality graphics, and pictorial information; and it must be able to display multiple documents simultaneously.

High-end automation requires both software and hardware that are not included in the PC plans disclosed to us. Software to handle multiple-object documents and multiple documents in a "desktop" presentation appears absent, along with formats and architectures for interchange of such complex objects. We require a larger range of display options--up to 19" diagonal screens with resolutions in the 1200 x 1000 pixel range. Color and gray scales should also be available. This size is needed for handling multiple document displays in legible type.

DCI EXEC REG

[redacted] STAT

While ESD is concerned with hardware almost in this range, your orientation appears to be in the graphics, CAD/CAM arena. At the time of our meetings, the graphics direction to be taken by ESD was still being debated and not disclosed, but it is clear from all indications that the trend is toward continuing to view graphics as a discrete CAD/CAM-like market rather than as intimately relating to documents. This is reinforced by the continuing idea that the 3270 AT requires special hardware to do any sort of host graphics, neglecting the possibilities for doing some graphics in the basic unit itself. It is not clear that the trend to special graphics units and the desire for a family of integrated office automation systems to handle text, graphics, and pictorial information are mutually compatible.

I hope it is clear from our visits and other discussions that our interest in these areas is very active. Disclosures on directions in the graphics arena would be of great interest, as are any indications of directions in office automation utilizing intelligent workstations. The particular interest in high-end document production is an important one in our planning. Equipment that does this kind of work is available from various sources, although without the required full integration into the IBM architecture. We note the lack of an IBM entry in this arena to set standards. If capabilities such as those described were available in a member of the 3270 AT family or even the standard AT, it would significantly enhance the attractiveness of that family and related IBM products.

I hope this discussion helps to clarify some areas of mutual interest. We are encouraged by planned convergence of the IBM AT and the 3270 AT. This directly addresses a major area of concern in large user organizations such as CIA. I want to thank you and your obviously very capable and dedicated personnel for sharing their plans with us. We appreciate the opportunity to learn about Entry Systems Division and thank you for the courtesy and hospitality extended to us. The dialogue to date has been extremely valuable, and I hope it will continue.

Sincerely,

[redacted] STAT

Executive Director

Enclosure: a/s

WORK SCENARIO FOR AN INTELLIGENCE ANALYST

A "typical" work scenario for an intelligence analyst spans an array of disciplines from largely qualitative work such as that of political analysis to the totally quantitative work of science and technology. Thus, their data processing activities range from primarily working with words and documents through running large-scale physical simulation models.

The common denominator of all Agency analytical work arises from the nature of our principal product: documents, typically in paper form, which include words, graphics, and pictorial information. The Agency produces a broad array of analytical reports on all phases of its work. Thus, whatever the analytical discipline, all of our analysts work in a "word factory." Thus, intelligence analysts and knowledge workers in the Agency have an important requirement for advanced office automation technology.

As analysts develop papers, they synthesize a variety of information. They may be working with one or more narrative cables, as well as written communications from other analysts, or even other Agency publications on the same topic. During the analysis of a problem, the analysts construct and communicate text, graphics, and pictorial information for further consideration. They combine spreadsheet data directly into documents; either in a tabular display or in graphic representation. They may also construct graphics to aid the analysis process, or for use in presentations.

The "desktop metaphor" approach to user interfaces has strong appeal to intelligence analysts; they have reacted very favorably to commercial products that implement the desktop metaphor as well as internal Agency experimentation in this area. The key aspects of this approach that help the analyst in his work are:

1. A high-resolution display that can display two full pages of text at once. Sometimes, two pages are displayed side by side; even more often, smaller fragments of several documents are displayed. However, two full pages is a good estimate of the total capacity required. In terms of resolution, our experience is that 1000 dots horizontally is just sufficient to meet this need. A screen size of 15" is the minimum needed to allow this amount of text to be displayed in a font that is large enough to be read easily; a 19" screen is much better.

2. The ability to display parts of several different documents on the screen at once, with separate scrolling for each document.

3. The ability to cut and paste between the different documents that are displayed.

The requirements of intelligence analysts for graphics and pictorial information are quite sophisticated. Intelligence products often include maps overlayed with symbols, photographs, diagrams, charts, or other forms of graphical or pictorial display. This same office automation technology that supports the analyst in his production of text information should also be able to store, transmit, and manipulate all these forms of graphics and pictorial information for inclusion in a report.

Graphics are produced for uses other than inclusion in finished reports. During the analysis of a problem, the analyst may wish to construct and communicate graphical or pictorial information for analytical purposes, to help in the understanding of a problem. He or she may also construct graphics for use during a presentation; such graphics tend to be different in form from publication or analytical graphics.

Spreadsheet software is also of value to intelligence analysts in many areas. It is of obvious use for economists, but also is useful in any application where a tabular set of data may require mathematical, sorting or counting operations to be performed. The ability to incorporate spreadsheet data directly into documents as a table of information is required. The ability to directly generate graphics from spreadsheets is another important capability, along with the ability to also incorporate such a graphic directly into a document.

[redacted] STAT

MD/OIT/[redacted] (18APR86) STAT

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